

## **BOX PARTITION**

### **Field of the Invention**

This invention relates to the design and construction of an internal box partition for use in packaging.

### **Background of the Invention**

Single piece and multiple piece paperboard partition designs are well known in the prior art and have been long employed to divide the interior portion of a box or container. Multiple piece paperboard partitions are complex in design and require multiple steps to collect and assemble the partitions, making such designs less desirable for use by unskilled labor or in circumstances requiring quick assembly, as in an assembly line at a manufacturing and packaging plant. Single piece designs, while simpler to construct, are limited in the number of partitions available upon assembly, due to constraints on wieldable paperboard dimensions and the ability to fold a single piece design in three dimensions, aided by score lines and cut panels.

### **Summary of the Invention**

There have been a number of patented partitions formed from a unitary sheet of paperboard. The inventive

structure presents a number of advantages over the prior art. First, the invention is simple to form. Only one piece of paperboard is used, no glue is needed and the structure assembles easily without resort to complicated assembly procedures and with only a modicum of manual dexterity. The ends and sides easily and quickly fold upward to create the basic partition structure. The present invention is unique in providing partitions of at least 12 square cells of equal size. No other single piece partition structure has been disclosed to handle this many cells. As many bottle shipments are shipped in units of 12, this invention provides a quick and novel means of packaging such shipments with minimum effort and maximum efficiency. It will allow a full unit to be loaded into one box. The square shape of the cells is the most secure shape for shipping bottles.

Another advantage of the invention is the use of hand pressure to compress the assembled structure inward, creating additional partitions. The biased nature of this finished partition results in the partition pressing on the inner walls of the container, aiding in content protection and minimizing shifting of the partition elements.

The invention's alternative embodiments utilize a unitary sheet of paperboard formed into cells of varying

sizes: 6 of one size, large enough to hold single bottles and 3 of a longer size to hold either a different product or a boxed version of the bottles, providing some flexibility in the design and utility of the box partition structure. The design of the invention provides further flexibility and utility, not otherwise disclosed in the prior art, by easily allowing the extension of the design to accommodate a box partition of greater than 12 cells by inserting additional side elements to the basic 12 cell design.

#### **Brief Description of the Drawings**

Fig 1 is a plan view of the cut and scored blank for forming a partition structure according to the embodiments described herein.

Fig 2 is an isometric view showing the box partition in its compressed, ready-to-use state.

#### **Detailed Description of the Invention**

Shown in Figure 1 is a blank 11 that has been die-cut and scored from a sheet of paperboard. While corrugated fiberboard is the most common material currently used in the box partition industry, any material or combination of

materials susceptible of performing the described and claimed functions may be used.

The blank 11 from which the twelve cell embodiment of the invention is formed, comprises a first end 1 containing slots 5 and a second end 2 containing slots 6. Bottom 3 is comprised of bottom sub-sections 7 and 8. First end 1 and second end 2 are foldably connected to Bottom 3 at distal ends of a first sub-section 7 and a second sub-section 7. A first side 4 and a second side 9, each comprising sub-sections 10 and sub-sections 12, are foldably connected at the intersections of sub-sections 10 and first and second sub-sections 7.

To form the 12 cell embodiment of this invention, first side 4 and second side 9 are folded upward and substantially perpendicular to bottom 3. First end 1 and second end 2 are similarly folded upward and substantially perpendicular to bottom 3, with a first sub-section 10 on each of sides 4 and 9 intersecting slots 5 and with a second sub-section 10 on the distal end of each of sides 4 and 9 intersecting slots 6. This forms three squares or cells at each end of the partition and three larger rectangular cells in the partition midsection. Sub-sections 10 are compressed towards sub-sections 12; fold lines common to sub-sections 10 and sub-sections 12 allow sub-

sections 12 to fold together, creating additional partitions. Fold lines common to sub-sections 7 and sub-sections 8 allow sub-sections 8 to fold together, creating additional partitions. An embodiment may incorporate a first tab 13, cut from side 4 and a second tab 14, cut from side 9, to fold towards the partition interior to form an interior divider for the inside cells. Additional embodiments may incorporate dimensions in end 1, end 2 and bottom 3 to accommodate a partition structure of more than 3 cell widths. Additional embodiments may also incorporate dimensions in side 4 and side 9 to accommodate additional sub-sections 10 and sub-sections 12 and bottom 3 dimensions to accommodate additional sub-sections 7 and sub-sections 8 to create a partition structure of more than 4 cell lengths.

Although the invention has been described with regard to certain preferred embodiments which constitute the best mode presently known to the inventor, it should be understood that changes and modifications that would be obvious to one having the ordinary skill in this art may be made without deviating from the scope of the invention.